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ABSTRACT

One of two publications developed to facilitate bilingual vocational training, this guide is designed to assist educational agencies at the national, state, and local levels in determining priorities for development of materials needed for bilingual vocational training programs. (CE 019 071 contains a handbook for developers of bilingual vocational instructional materials.) The information is divided into four chapters. Chapter 1 discusses the process of identifying appropriate language groups. Chapter 2 provides guidelines for selecting appropriate vocations for which bilingual materials should be designed. Overall curricular concerns (the entire course of instruction or program, including methodologies, techniques, and materials) are addressed in chapter 3. Chapter 4 summarizes recommendations which are discussed throughout the guide. Some additional conclusions relevant to the development and dissemination of bilingual vocational materials are also included. (BM)

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A GUIDE TO DECISION MAKING FOR BILINGUAL VOCATIONAL MATERIALS DEVELOPMENT

Prepared by:

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November 1978

CE 019 070

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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"Handbook For Bilingual Vocational
Materials Development."

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PREFACE

Addressing the problem of high unemployment among limited English-speaking persons, Congress has said:

> ...one of the most acute problems in the United States is that which involves millions of citizens, both children and adults, whose efforts to profit from vocational education are severely restricted by their limited English-speaking ability because they came from environments where the dominant language is other than English; that such persons are therefore unable to help to fill the critical need for more and better educated personnel in vital occupational categories; and that such persons are unable to make their maximum contribution to the nation's economy and must, in fact, suffer the hardships of unemployment or underemployment.*

In accordance with legislation designed to remedy this problem and in response to these needs, Development Associates, Inc., has developed two publications to facilitate bilingual vocational training: a Handbook for developers of instructional materials and a Guide for curriculum decision-makers. The effective use of these two publications, it is hoped, will alleviate barriers to employment for limited English speakers.

Bilingual vocational training provides underemployed or unemployed limited English speakers with job skills using both the languages of the learners and English. The learners' languages, used in the training to facilitate greater effectiveness in learning job skills, are gradually phased out as more and more English language skills are acquired. The learners enter a course as limited English speakers and exit with sufficient occupational and verbal skills to perform specific jobs.

*Public Law 94-482, Title I, Part B, Subpart 3, Section 181.

This Guide is designed to assist educational agencies at the national, state, and local levels in determining priorities for development of materials needed for bilingual vocational training programs. It is organized to lead decision-makers through the process of identifying appropriate language groups, analyzing occupational requirements, assessing curricular concerns, and ultimately determining the instructional materials which need to be developed. A short bibliography of bilingual vocational instructional materials has also been included.

Bilingual vocational training is a relatively new field of endeavor. Consequently, there are very few appropriate instructional materials available. This Guide will provide "informed guidance" to curriculum decision-makers in determining priorities for developing materials to meet the needs of limited English speakers.

ACKNOWLEDGEMENTS

No one individual or group of individuals could undertake so important a task as producing this Guide without the cooperation, encouragement, suggestions, and insights provided by teachers, trainees, program administrators, government officials, and leaders in the field. It is to these that great appreciation is felt by the staff of researchers and writers at Development Associates.

We wish to thank Mary Marks and Doris Gunderson for their clear guidance and encouragement on behalf of the Office of Education and for the assistance they gave in helping to shape the approach to ensure that this short work be both theoretically sound and practical.

The professional staff of Development Associates were made welcome by bilingual vocational projects throughout the country and were permitted ample opportunity to visit, observe, and interview hundreds of individuals including staff, administrators and trainees. The projects which graciously hosted the staff include:

> The Vocational Education and Extension Board of Nassau County (Long Island, NY), The Board of Cooperative Educational Services of Nassau County (NY), The China Institute of America (NYC), The Chinatown Manpower Project, Inc. (NYC), The American Council for Emigres in the Professions (NYC), Bronx Community College, Continuing Education University (NY), Crystal City Independent School District (TX), San Francisco Community College Skills Center (CA), the University of California Dental School at Los Angeles (CA), DeAnza College Bilingual Center (Sunnyvale, CA), and Arlington Public Schools Bilingual Vocational Project (VA).

In addition, a number of different surveys were sent out to Office of Education funded (Part J) programs.

Short survey instruments, each sent to less than nine recipients, were addressed to administrators, instructors and trainees. Special thanks are due those who took great care in describing their programs and expressing their concerns and opinions about texts they used and additional materials needed. In addition to the sites visited, others who responded include:

> Ramah Navajo Adult Education Center (NM), Little Wound Bilingual Training Project (Kyle, SD), The Emergency Medical Technicians Program (TX), Texas Woman's University (Denton, TX), Culinary Arts Program (New Orleans, LA), Miami-Dade Community College-New World Center Campus (Miami, FLA), the Canadian Valley Area Vo-Tech School District No. 6 (El Reno, OKL), Bilingual Vocational Training (Albertson, NY), and Bangor Community College (Bangor, ME).

We appreciate the members of the Panel for Languages and the Panel for Vocations (cf. Chapters I and II) who generously shared time, ideas, and insights to help assure that the Guide reflects a broad and sound national perspective.

Special thanks are due Dr. Ed Kelte of NIMH for sharing with the staff the decision-making model and priority index developed as a Planning Aid Kit (PAK) for Community Mental Health Facilities which helped shape the model used in the Guide.

This Guide would have been impossible to complete were it not for the patient and generous kindness of Dorothy Waggoner and Leslie Silverman of the National Center for Education Statistics of the Office of Education for providing much of the data used.

Members of the Staff deserve special recognition. Allan Boneau and Howard Fleischman helped develop the data collection procedures. Shymal Chowdhury deserves special recognition for his painstaking efforts at

collecting and analyzing population and job statistics from nearly every possible source available to provide the data base upon which recommendations were based. And to Patricia Vasquez is due deep appreciation for bringing together hundreds of pages of text and writing the final manuscript represented in this Guide. Warren Chapman deserves special thanks for his contribution to the research, logistics, and final production of this text. Special mention must be made of the contribution made to the content of the text by Nancy Holland, and by Ruth Petkoff, the vocational curriculum coordinator for Arlington County, Virginia. A special debt of gratitude is felt for the dedication and professional care taken in preparation of this text for printing by Betty M. Pace of the Type-Shoppe and her assistant, Marie Boudrye, and for the personal interest and help given by Ed Loman of Goetz Printers.

Robert E. Maston, Ph.D.
Project Director

INTRODUCTION

> Our Nation is being challenged by a set of new issues having to do, in one way or another, with the quality of life.
>
> - Work in America

Unemployment, along with the other two crises - inflation and energy - has captured the nation's interest and concern. "Full employment" is called for...and Congress responds. There are throughout the nation, however, silent voices needing sympathetic attention and action focused on their special problems. These voices are silent since they cannot as yet communicate with us in English. They represent those young and old whose intelligence and creativity are expressed in Spanish, Italian, French, Navajo, Vietnamese, Korean and numerous other "foreign" tongues. They are members of the unemployed masses, not out of choice, nor due to lack of ability. Rather, since they are unable to communicate adequately in the English-speaking world of work, they either remain unskilled and unemployed or are willing to settle for a menial job with neither sufficient income nor opportunity for advancement. Many of these are new immigrants or refugees; others were born in this country or one of its territories. All share a common need - training in job skills that will lead to viable employment with a future. The barriers are formidable: need to develop marketable skills; need to be able to communicate in English both to obtain the job and to function in it; and, the most difficult of all barriers...time. The job is needed NOW!

There is simply not enough time to permit adult limited English speakers a leisurely academic study of English - though that would be desirable for personal living and an ability to adjust to the demanding life of the English-speaking world. Nor is it possible for them to benefit from most vocational courses offered

throughout the country, since such courses are conducted in English. Bilingual vocational training legislation was enacted in response to these needs. The term, "bilingual vocational" needs clarifying since ambiguity and misunderstanding cloud policy issues and hinder programmatic decision-making.

By "bilingual vocational training" is simply meant skill or job training for limited English speakers in which the trainees own language is used to facilitate rapid comprehension and mastery of the job skills, and English is taught as it pertains to the performance demands of the vocation being learned. That is, English is not the goal of the program, but serves as a "vocational communication" skill. The use of the two languages in training constitutes "bilingual". The term "vocational" does not imply "career" development. Rather, "vocational" implies "job readiness" with the mastery of performance skills and the development of occupational competency being the number one priority.

Over the past decade numerous experimental and demonstration projects have proven that bilingual vocational instruction can and does provide a viable means of preparing non-English and limited-English speakers to enter the job market.

As will be described in this Guide, one of the major concerns of bilingual vocational administrators, staff, and trainees is the paucity of adequate instructional materials. The question as to what ought to be prepared and how such decisions should be made provides the basis for this Guide.

This Guide, therefore, provides the reader with a systematic approach to deciding what kinds of instructional materials should be developed -- in what languages (Chapter I) and for what vocations (Chapter II). The Guide also provides an overview of programs, curricular concerns, materials and methods appropriate for such training (Chapter III).

Development Associates has attempted to provide a model for decision-making that would be equally usable for national decision-makers as well as state and local officials. We have also used the model to arrive at recommendations which could be examined by national leaders, be modified, and implemented for future programs.

This Guide to Decision-making for Bilingual Vocational Materials Development will have accomplished its purpose if, as a result of its use, adequate bilingual vocational materials are produced and used to provide a "quality of working life" for those in need.

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CHAPTER I

LANGUAGE PRIORITIES

Bilingual vocational instructional materials are written in English and in the language of the learners. Since there are numerous languages spoken by those limited English speakers who could benefit from bilingual vocational training in overcoming their employment handicaps, one of the first concerns of the decision-maker is to establish priorities among the various languages represented. This chapter addresses this concern.

Because the programs are adult, post-secondary, and vocational, the focus is upon limited English speakers who have completed or left high school, and are unemployed or underemployed.

Although precise data on such limited English speakers is not readily available, information from the 1976 Survey of Income and Education (SIE) indicates that there are approximately 28 million persons who have native languages other than English or live in households where other languages are spoken. This SIE study, as well as the earlier Survey of Languages undertaken by the Bureau of the Census, offers clear evidence of the disadvantages suffered by this sizeable group of people in attempting to compete in the job market. The studies indicate, for example, that persons with limited English ability have significantly less education, generally participate in the labor force in relatively lower numbers, and have higher unemployment rates than those from English-speaking backgrounds.

There are, one may be sure, a wide array of differences among the language groups. Two out of three persons with non-English language backgrounds were born in the fifty states, Puerto Rico, or a U.S. territory. Among the remainder can be found the relatively recent immigrants and refugees. Some of these individuals with limited skills in English have valuable vocational skills which could be utilized if upgraded and

adapted to U.S. methods and if the individuals could gain sufficient capability in English to function in the work environment. Many others who are less fortunate have few marketable skills and an obvious need for assistance in their efforts to overcome their disadvantages.

Although these limited English speakers can be found in all states, the various language groups tend to cluster geographically for obvious reasons. They may then become a focus for social problems of various kinds and, therefore, come to the attention and concern of local leaders. Viewed at the national level, the concerns have added dimensions. A local problem could then be seen as an isolated case which could be resolved locally or as an example of a widespread problem that would require federal attention. Anticipation of future needs that loom large when viewed nationally is an important mission of the national decision-maker. The needs of groups such as Native Americans, Native Alaskans, and residents of the Pacific Trust Territories which have traditionally had special relationships with the Federal Government are, of course, primary concerns of national decision-makers.

In summary, a sizeable number of persons of labor market age are from a variety of non-English language backgrounds and are at a competitive disadvantage in the labor market. Planners at the federal, state, and local levels confront myriad, complex issues in developing solutions to the vocational problems of this special population -- not the least of which is the need to set priorities among the sometimes competing needs of the various language groups.

In situations involving rapid change and conflicting choices, national leaders often feel pressured into making intuitive decisions rather than following a carefully planned, data based, rational system of priority setting. Reactive, intuitive approaches serve well in emergency situations. Long range program planning, however, provides for more efficient implementa-

tion and more predictable results. Systematic techniques, which are becoming increasingly common in various organizational settings consist of the use of so-called "models", i.e., step-by-step procedures, to aid planners in the complex task of decision-making. The model, shown in Figure 1, represents such an approach to organizing and analyzing available data on language groups. This model has been developed for use in the Guide to provide a process that can be used by national decision-makers and modified or replicated by state and local decision-makers, and is the basis for recommendations made in this Guide concerning language choices for bilingual vocational materials development.

The first step in following this process has been to identify the issues and problems associated with limited English speakers. Arising from the issue is the need to formulate the question to be decided upon.

FORMULATING THE QUESTION

Since it is rare indeed for any program to have sufficient resources to meet all needs simultaneously, setting priorities among competing needs is essential. The first question, therefore, may be stated:

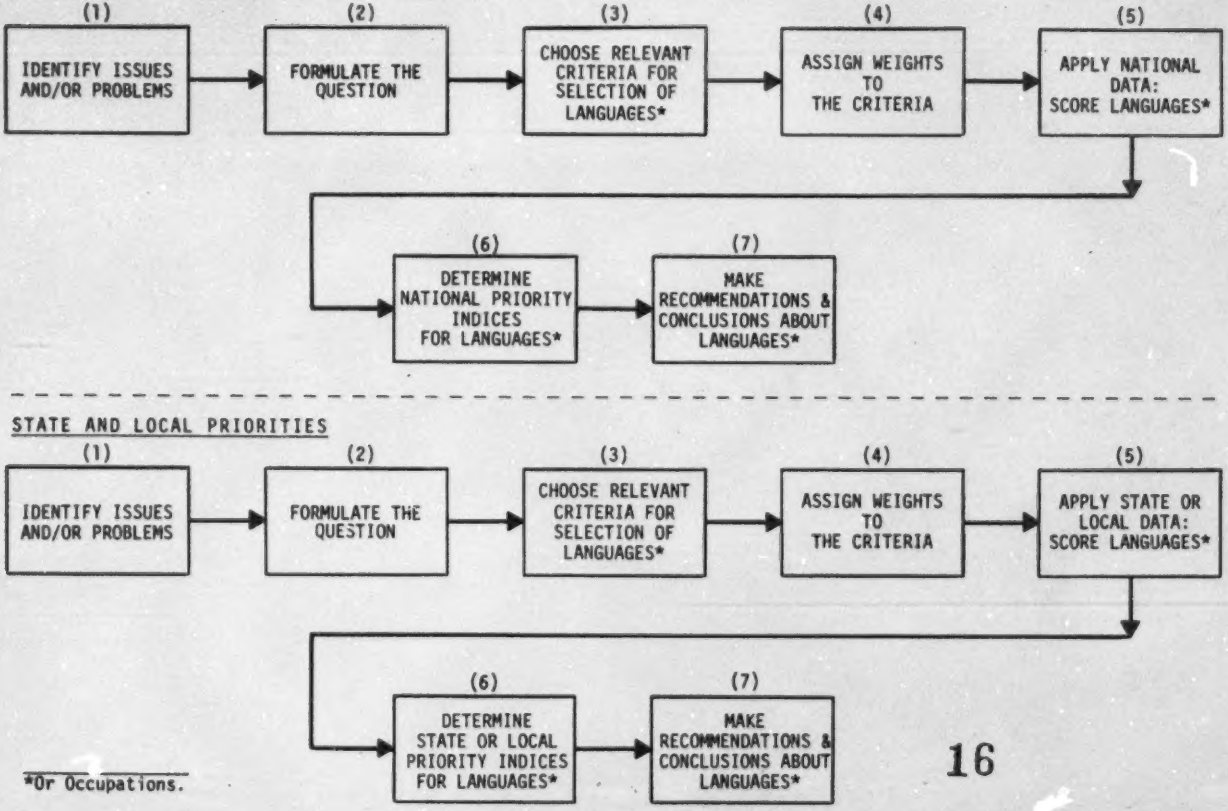
> For which language speakers and in which languages should bilingual vocational instructional materials be developed?

Having asked the question, the next step is to identify relevant criteria for judging between various languages as spoken by limited English-speaking groups. The criteria would not only help identify various kinds of data needed, but would also provide a means of evaluating the relevance of any given set of data.

CHOOSING RELEVANT CRITERIA

The criteria listed below are based on an extensive review of existing literature, visits to and surveys of

FIGURE 1. MODEL FOR DETERMINING LANGUAGE AND OCCUPATIONAL PRIORITIES



*Or Occupations.

numerous bilingual vocational training programs, and consultation with recognized experts in the field. They are not intended to be considered as the final list nor necessarily the best list since decision-makers at the federal, state and local levels will have various and unique concerns which they must also consider when setting priorities. In fact, the experts consulted not only confirmed the criteria below but added other considerations equally valid. Reviewing these criteria will acquaint the reader with the rationale used in making recommendations in this Guide and also will help demonstrate ways in which the model can be utilized by decision-makers to arrive at other equally valid conclusions.

1. Size of the Number of Speakers of the Target Languages

The number of potential users of bilingual vocational materials in a selected language group is an important consideration in deciding among the many possible languages and in setting priorities among the various ethnic groups who would become recipients for instructional materials produced in their language. One could use estimates of the number of limited English speakers aged 16 to 64 in rating groups on this criterion. However, since the only statistics currently available are on individuals from non-English language backgrounds -- numbers of those who speak a given language at home -- some means must be chosen to estimate the proportion of those who speak the foreign language to those who are also limited English speakers. It is obvious, for example, that all those who speak German or Italian at home out of preference are not ipso facto limited English speakers. Consideration of factors such as percentages of recent immigrants and those who are foreign born can be helpful in developing these estimates.

2. Employment

Available statistics on both labor force participation and unemployment among the language groups can be ana-

lyzed for this criterion. The problem of unemployment could also be considered by examining available data on the extent to which limited English speakers are found clustered in occupations which are seasonal or in other ways provide only part-time employment.

3. Income

Income is an indicator of the standard of living which a language group has achieved and thus the extent to which the group is disadvantaged. It can be safely assumed that a language group with a high proportion of members below the poverty level may be in need of bilingual vocational training.

4. Education

Limited English speakers may have educational levels ranging from no formal schooling through post-graduate education. Here, statistical evidence of lower levels of educational achievement by youth and adults in a language group can be a high indicator of need for bilingual vocational training.

5. Geographical Distribution

This criterion can be used to help determine the extent to which a language group's need is national in scope. If the group has tended to cluster in one or two areas, the states and localities may be able to meet the need for bilingual vocational materials. On the other hand, any group which is distributed more widely throughout the country could become a national priority.

6. Immigration Patterns

The number of new immigrants of any one language group arriving in the country will indicate for the most part a high percentage of limited English speakers. Caution must be taken, however, when considering statistics from Scandinavian countries and others where English is well-learned in the school system.

Attention must be paid to the linguistic background of the group of immigrants represented by a set of statistics before assessing the extent or percentage of limited English speakers. At the state and local level, decision-makers may wish to examine base-line data and projections of the probabilities of the in- and out-migration patterns of the language group as an important factor in setting local priorities.

7. Skills or Abilities

The level of job-related skills or abilities possessed by the various language groups is another key indicator of need. Group members may possess highly marketable skills, and materials may need to be designed for adapting those skills to local job markets. On the other hand, members may possess few appropriate skills and that becomes a major consideration in the choice of kinds of materials to develop.

8. Special Factors

Other criteria might include important factors such as refugee influx, long-term neglect of a group, and political considerations. Some professionals have suggested additional factors to include: the extent to which the language group may have other sources for help, e.g., through local ethnic businesses; the extent to which the language group speak languages similar to English, thus making it easier for them to adapt without as much need for bilingual training; the extent of literacy in their own language. If a limited English speaker does not have or know a writing system for their own language, learning to read their own language would not be a help but an additional burden.

Those involved in the decision-making process at the national, state and local levels will, of course, want to add other criteria which are important within their own unique areas of responsibilities.

After establishing a list of criteria, the question arises as to just how important each of these criteria should be considered. Should each be treated as important as the others or does each criterion have a separate weight of relevance? The next important step in arriving at choices for language priorities is, thus, to assign weights to each criterion.

ASSIGNING WEIGHTS TO THE CRITERIA

An individual decision-maker might assign weights to the criteria alone or invite others to participate in this process. The latter might be recognized experts in the field, those whose support will be essential to implementation of the decision, members of an advisory board, or representatives of other significant groups and organizations. Obviously, there are a variety of methodologies for securing such participation, ranging from telephone or mail surveys to group meetings. Determination of who is to be involved and their role will, of course, depend upon the specific situation.

A simple process for assigning weights of relevance, whether by an individual or group, involves what is here referred to as a "criterion-weight" (CW) index. The CWs represent the values for the criteria and indicate the relative importance of each criterion with respect to the others. In essence, each criterion is rated as "high" (10 points), "medium" (5 points), or "low" (2 points) in importance with a rating of "1" resulting in rejection of the criterion as being totally unimportant. Those participating in this process rate each criterion on this or a similar scale, and the CW index is then calculated based on their combined ratings.

In order to fulfill the purposes of this Guide, a number of prominent individuals were asked to serve as a panel of experts whose role would be to determine the relative values of the criteria described earlier. These weights were then utilized in developing the national recommendations summarized at the end of this

Chapter. Those who served on the panel are listed in Figure 2.

FIGURE 2
LANGUAGE PANEL MEMBERS

Rudolph C. Troike, Jr., Ph.D. Associate Director of the National Clearinghouse for Bilingual Education; formerly, Director of, and at present, Senior Associate of the Center for Applied Linguistics; Professor of English and Linguistics, U. of Texas; Author with M. R. Saville, A Handbook of Bilingual Education.

William Wang, Ph.D. Professor of Linguistics, U. of California, Berkeley; Editor of the Journal of Chinese Linguistics; Guggenheim Fellow, 1978, '79; Earlier researcher and evaluator of vocational programs among Chinese in San Francisco.

James E. Alatis, Ph.D. Professor of Linguistics and Dean of the School of Languages and Linguistics at Georgetown University; Executive Secretary-Treasurer of the international professional organization of TESOL (Teachers of English to Speakers of Other Languages).

Dorothy Waggoner, Ph.D. Education Program Specialist, National Center for Education Statistics, U.S. Department of Health, Education, and Welfare/Education Division; formerly with what is now called the Office of Bilingual Education of the Office of Education; Author of "Non-English Language Background Persons: 3 U.S. Surveys" in Sept. '78 TESOL Quarterly.

APPLYING NATIONAL DATA

Following the weighing of the selected criteria and the generating of the "criterion-weight" index, collected data are then applied to the model and analyzed, resulting in a total "score" for each language being considered. The score is assigned on the basis of the best available information, that is, the number of limited English speakers, income data, employment figures, etc. Such national data can be found in Tables 1 through 7 at the end of this chapter. Methods for scoring each language against the criteria are also indicated at the bottom of the tables. State and local decision-makers can obtain some local data from the sources listed in the tables. Most state and local governments also have their own data bases which could provide other useful information for local decisions. At the county level, for example, departments of planning, community or economic development, or similar agencies are likely to have local data related to language groups.

DETERMINING NATIONAL PRIORITY INDICES

The result of using the model systematically is the generating of the "language priority index" (LPI) as the indicator of a language group's priority for the development of bilingual vocational materials. To obtain the LPI, the scores assigned to the language group on each criterion are multiplied by the weight assigned to that criterion. The sum of those combined figures gives the language group's overall rating. Once these calculations are completed, the languages can be ranked in accordance with their overall ratings on the LPI. A form for making these calculations is included in Appendix B which may be used by the readers for re-calculating the LPI based upon one's own priorities and criteria as well as the weight given any one set of criteria. Sufficient data are included to make it possible to arrive at conclusions and recommendations different from those provided in this Guide.

RECOMMENDATIONS AND CONCLUSIONS

After organizing and analyzing all available national information in accordance with the model, it can be recommended that the following languages be given priority at the national level for the development of bilingual vocational materials:

- Chinese
- Filipino (Tagalog)
- Korean
- Navajo
- Spanish
- Vietnamese

The preceding seven (7) Steps followed the Model for Determining Language and Occupational Priorities (Figure 1, page 4). These same Steps with modification can also be used for determining state and local priorities as suggested in the following section.

DETERMINING STATE AND LOCAL PRIORITIES

Since a model is considered useful only to the extent that it is broadly applicable, the decision-making model used in this chapter on national language priorities has been designed so that the same steps may be followed when considering occupational priorities (Chapter II), and when deciding state and local language priorities. The term "DATA" used in Step 5 of the Model (Figure 1, page 4) refers to "national data". When applying the model to a state or local community, obviously other data bases will be used. In a similar fashion, Step 6 will consist of calculations made on the state and local level using criteria locally derived. And, as a result, Step 7 will provide recommendations and conclusions applicable to state and local situations.

TABLE 1: SIZE

Estimated numbers of persons with non-English-language backgrounds, in the United States, by language and age group: Spring, 1976

Non-English-language background	Age 16 and over	Age 16 to 24	Age 25 to 44	Age 45 to 64	Age 65 and over
Arabic	143,076	28,460	59,978	38,232	16,406
Chinese	414,974	75,618	195,342	97,819	46,195
Filipino	362,206	53,244	195,853	63,627	49,482
French	1,602,893	210,306	495,101	580,755	316,731
German	2,767,839	195,400	524,060	855,114	876,535
Greek	437,863	70,117	161,623	143,247	62,876
Italian	2,605,187	234,476	555,960	1,149,403	665,348
Japanese	382,054	45,889	130,249	148,336	57,580
Korean	131,947	32,809	68,707	26,911	3,520
Navajo	91,907	36,002	30,600	16,683	8,622
Polish	1,421,044	78,086	211,393	743,272	388,293
Portuguese	410,578	72,026	105,015	162,420	71,117
Russian	213,006	8,563	32,967	92,863	78,613
Scandinavian	639,964	29,863	91,204	196,314	322,583
Spanish	6,790,810	1,800,598	2,984,867	1,503,442	501,903
Vietnamese	87,944	34,564	45,420	7,422	538
Yiddish	773,090	65,572	91,992	272,878	342,648
Other	2,811,926	313,268	778,706	1,027,507	692,445

SOURCE: Survey of Income and Education, conducted by the U.S. Bureau of the Census, Spring, 1976.

Key Variable: number of persons, age 16 to 64, in language group
Scoring: Low, below 200,000; Medium, 200,000 to 500,000; High, 500,000 or over.

TABLE 2: EMPLOYMENT

Unemployment and labor force participation within language groups, age 16 and over: Spring, 1976

Non-English-language background	Unemployment Rate	Labor Force Participation Rate
Arabic	4.7	60.5
Chinese	7.6	62.3
Filipino	4.5	72.2
French	8.4	59.2
German	4.6	45.2
Greek	9.7	61.0
Italian	7.7	55.2
Japanese	4.4	67.2
Korean	16.9	70.9
Navajo	21.3	51.7
Polish	6.4	49.8
Portuguese	8.8	62.9
Russian	3.0	50.2
Scandinavian	3.7	39.2
Spanish	10.8	63.1
Vietnamese	12.8	56.1
Yiddish	11.5	43.7
Other	6.7	55.1

SOURCE: Survey of Income and Education, conducted by the U.S. Bureau of the Census, Spring, 1976

Key Variable:	Unemployment rate
Scoring:	Low, below 5%; Medium, 5 to 10%; High, over 10%.

TABLE 3: INCOME

Numbers and percentages of persons below poverty level with non-English-language backgrounds in the United States, age 16 to 64: Spring, 1976

Non-English-language background	Total number of persons, age 16 to 64	Number of persons below poverty level, age 16 to 64	Percentage of persons below poverty level, age 16 to 64
Arabic	126,670	25,857	20.4
Chinese	368,779	52,312	14.2
Filipino	312,724	14,099	4.5
French	1,286,162	104,260	8.1
German	1,574,574	73,056	4.6
Greek	374,987	33,584	8.9
Italian	1,939,839	100,486	5.2
Japanese	324,474	14,220	4.4
Korean	128,427	34,328	26.7
Navajo	83,285	35,036	42.1
Polish	1,032,751	51,934	5.0
Portuguese	339,461	26,370	7.8
Russian	134,393	6,149	4.6
Scandinavian	317,381	23,414	7.4
Spanish	6,288,907	1,232,316	19.6
Vietnamese	87,406	58,082	66.4
Yiddish	430,442	24,929	5.8
Other	2,119,481	193,905	9.1

SOURCE: Survey of Income and Education, conducted by the U.S. Bureau of the Census, Spring 1976

Key Variable:	Percentage of persons, age 16 to 64, below poverty level.
Scoring:	Low, below 10.5%; Medium, 10.5 to 20.0%; High, over 20.0%.

TABLE 4: EDUCATION

Numbers of persons by years of school completed in different non-English-language backgrounds in the United States, age 16 and over: Spring, 1976

Non-English-language background	Total numbers of persons, age 16 and over	Persons who have completed 8 years or less of school, age 16 and over	Persons who have completed 9 to 11 years of school, age 16 and over	Persons who have completed 12 years of school, age 16 and over	Persons who have completed 13 years or over of school, age 16 and over
Arabic	143,076	34,134 (23.8)	14,609 (10.2)	45,298 (31.7)	49,033 (34.3)
Chinese	414,974	85,458 (20.6)	47,901 (11.5)	91,533 (22.0)	190,081 (45.8)
Filipino	362,206	69,862 (19.3)	40,681 (11.2)	74,460 (20.5)	177,202 (48.9)
French	1,602,893	496,859 (31.0)	292,921 (18.3)	451,351 (28.1)	361,760 (22.6)
German	2,767,839	812,420 (29.3)	324,269 (11.7)	721,396 (26.1)	593,024 (21.4)
Greek	437,863	147,650 (33.7)	54,280 (12.4)	121,644 (27.8)	114,289 (26.1)
Italian	2,605,187	987,829 (37.9)	505,240 (19.4)	751,151 (28.8)	360,967 (13.8)
Japanese	382,054	64,348 (16.8)	43,571 (11.4)	147,016 (38.5)	127,118 (33.3)
Korean	131,947	17,986 (13.6)	13,601 (10.3)	50,938 (38.6)	49,422 (37.4)
Navajo	91,907	40,854 (44.4)	17,435 (19.0)	22,405 (24.4)	11,210 (12.2)
Polish	1,421,044	569,409 (40.1)	274,275 (19.3)	384,705 (27.1)	192,653 (13.5)
Portuguese	410,578	202,355 (49.3)	67,085 (16.3)	76,624 (18.7)	64,513 (15.7)
Russian	213,006	55,112 (25.9)	32,454 (15.2)	66,505 (31.2)	58,935 (27.7)
Scandinavian	639,964	249,359 (39.0)	76,113 (11.9)	159,298 (24.9)	155,194 (24.2)
Spanish	6,790,810	2,385,241 (35.1)	1,484,697 (21.9)	1,646,557 (24.2)	1,274,314 (18.8)
Vietnamese	87,944	8,241 (9.4)	19,703 (22.4)	26,021 (29.6)	33,978 (38.6)
Yiddish	773,090	204,707 (26.5)	123,938 (16.0)	232,567 (30.1)	211,877 (27.4)
Other	2,811,926	841,812 (29.9)	434,596 (15.4)	744,539 (26.5)	790,979 (28.1)

Note: The figures in the parentheses are percentages of total numbers of persons, 16 and over.
SOURCE: Survey of Income and Education, conducted by the U.S. Bureau of the Census, Spring 1976.

Key Variable: Percentage of persons, age 16 and over, who have completed less than 12 years of school.

Scoring: Low, below 45%; medium 45 to 60%; High, over 60%.

TABLE 5: GEOGRAPHICAL DISTRIBUTION

Number of states having 15,000 or more persons from non-English-language backgrounds -- by language group.

Language Group	Number of States
French	17
German	25
Italian	15
Spanish	28

SOURCE: Survey of Income and Education, conducted by the U.S. Bureau of the Census, Spring 1976

Key Variable:	Wide distribution among states
Scoring:	These four groups assumed to have high distribution; all others, low.

TABLE 6: IMMIGRATION PATTERNS

Non-English-language background	Number of Immigrants 1970-1976
Arabic	73,556
Chinese	149,665
Filipino	221,738
French	86,866
German	51,768
Greek	83,400
Italian	126,504
Japanese	32,552
Korean	152,610
Navajo	
Polish	27,945
Portuguese	88,495
Russian	18,279
Scandinavian	7,349
Spanish	908,351
Vietnamese	20,748
Yiddish	14,840

SOURCE: 1976 Annual Report of the U.S. Immigration and Naturalization Service

Key Variable:	Number of immigrants, 1970-76
Scoring:	Low, below 35,000; Medium, 35,000 to 100,000; High, over 100,000.

TABLE 7: REFUGEE INFLUX

Country	Number of Persons
Cambodia	6,099
Cuba	75,206
Germany	18,464
Vietnam	131,603
U.S.S.R.	10,599

Note: For Vietnam, Cambodia and Laos, the number of refugees are for the period 1975 through May, 1978. For other countries the figures are for the period 1974-1976.

SOURCE: 1) The U.S. Office of Immigration and Naturalization Service
2) Statistical Abstract of the United States, 1977.

Key Variable:	Number of refugees
Scoring:	High, Vietnam and Cuba; Medium, Germany, U.S.S.R., and Cambodia; Low, all others.

CHAPTER II

VOCATIONAL PRIORITIES

After decisions concerning language priorities have been made, consideration must be given to selecting appropriate vocations for which materials should be designed. Obviously, a primary mission of bilingual vocational training programs is to assist limited English speakers in competing successfully in the job market. In order to do that, it is necessary to have a thorough understanding of that market. In these days of rapid technological change, flexibility is certainly one essential element in successful competition. Occupations which can be adapted to changing needs are clearly desirable. The prospect for growth of jobs in a major occupational field is another critical factor in identifying vocations which will offer adequate opportunities for employment over the long term. Other characteristics such as opportunity for advancement, pay scales, and personal satisfaction play important parts in analyzing occupations for possible materials development.

While consideration has to be given to such factors which make selected occupations generally desirable, it is also essential to analyze the occupation's suitability to the specific language groups. A number of factors are relevant to this analysis. One is the extent to which English fluency is an entry requirement of the occupation. Obviously, positions with high requirements in this area may never be suitable for most limited English speakers who complete a bilingual vocational training program. The educational requirements for an occupation are also important. According to the recent Survey of Income and Education, the drop-out rate for persons between the ages of 14 and 25 with language-minority backgrounds who usually speak their native languages is 40%. (Among Hispanics, it is 45%; among those speaking all other languages, 30%.) Those occupations with firm requirements of a high school diploma or higher training might have to be rejected for bilingual vocational training programs for these persons.

Correlated to formal education is the level of skills which the language group possesses. Some groups may possess marketable skills which may need only to be adapted to the occupation as it is practiced here. Other groups may have few skills relevant to the selected occupation and need training to be prepared for the entry level of that occupation. Beyond education and skills, consideration has to be given to the less tangible factor of cultural compatibility of the occupation. Understanding factors such as the value placed upon meticulousness versus speed, the importance of respect and "saving face" in various cultures can be crucial in preparing members of the different language groups to succeed in a selected occupation.

Cultural compatibility will be central to motivating bilingual vocational program participants to succeed in the selected occupations. Much has been written over the past few years about the alienation of workers and how it affects productivity and the ability of American industry to compete on the world market. Because of these and other pressures, a good deal of experimentation has been undertaken in the work place. Developers of bilingual vocational training materials will surely have to be cognizant of such changes as flex-time, tandem jobs, and other efforts to improve the quality of working life.

Decision-makers, thus, have a large number of variables to consider when selecting appropriate occupations for the language groups. The model used in Chapter I (Figure 1), for organizing and analyzing the available data on the numerous variables for deciding language priorities, can be used for deciding occupational priorities. This decision-making process and subsequent recommendations in this chapter are directed to national decision-makers. It could, however, be utilized by state and local decision-makers with a few adjustments. Once again, the first step in the decision-making process would be to define the question carefully.

FORMULATING THE QUESTION

Since there are a large number of major occupation areas with numerous sub-categories, it is necessary to narrow the list to those which are most suitable to the selected language groups -- that is, occupations which are most compatible with the group's culture, needs, and aspirations as well as most likely to provide suitable employment.

> What are the occupations for which bilingual vocational training materials should be developed?

Having formulated the question, consideration is then given to identifying relevant criteria by which to judge the various occupations.

CHOOSING RELEVANT CRITERIA

The following criteria are the result of a broad-based survey of existing studies, site visits to numerous bilingual vocational projects, and interviews of acknowledged leaders in the field. These criteria represent the major concerns of recognized experts. Additional criteria of importance to the reader could be substituted for or added to this display.

1. Employment Growth

The growth potential of a given occupation is one of its most important characteristics. No matter how effective a bilingual vocational training program is in training members of the language group, it will not be considered successful if the participants have been trained for an occupation where few jobs are available. Projections of future personnel needs in each occupation being considered are, therefore, critical variables.

2. Job Openings

A variable closely related to employment growth is the average number of openings in a given occupation annually. The number of job openings in a future year reflects not only the growth of new jobs but replacement needs due to retirement, deaths, disability, and transfers. It is thus quite possible for a low-growth occupation to have a high number of projected job openings in a given year. These two criteria, taken together, should prove a good indicator of job prospects in a selected occupation.

3. Educational Requirements

Entry requirements for occupations vary with regard to the level of formal education needed. Some will accept less than a high school education whereas others require a high school diploma, junior college, technical institute, or other specialized training. The language group's average educational attainment should, therefore, be matched with the entry requirements of the various occupations.

4. Occupational Earnings

Potential income or wages is another important characteristic in determining the desirability of an occupation. Consideration can be given to both starting salary and the salary ladder for a selected occupation. A suitable variable might be the ratio of median salary for the occupation with median earnings nationally. This factor can then be compared with similar ratios for other occupational groups.

5. Occupational Advancement

Advancement prospects in the different occupations can be another factor in selection of the occupation. It will be difficult, if not impossible, to maintain the motivation and commitment of participants in a bilingual vocational training program if they feel they are

being prepared only for "dead end" jobs. Although the immediate goal of the program may be to secure entry level employment for the trainees, their long-term prospects are also an important concern. An occupation's ability to provide upward mobility can thus be a factor in this ranking. This criterion, in conjunction with the salary scale offered by the occupations, will be one key to motivating trainees.

6. Linguistic Demands

Occupations differ in their requirements for facility or skill in English, even at the entry level. Since the participants in the bilingual vocational training program will be limited English speakers, the linguistic demands of the various occupations have to be considered among the other criteria.

7. Special Entry Requirements

Some occupations have special requirements for entry such as apprenticeships and state licensing or certification. Membership in a union is an essential requirement for entry in other occupations. These factors have to be considered in selecting appropriate occupations as the focus of bilingual vocational training materials for specific language groups.

8. Suitability to Language Group

The selected language groups may have some ability or skills that make them particularly suitable for certain occupations. The nature and level of the trainees' skills as well as their culture are factors that need to be considered. Occupations selected have to be compatible not only with the trainees' capabilities but also with their perceptions of themselves and their aspirations.

ASSIGNING WEIGHTS TO THE CRITERIA

The procedure for assigning weights to the criteria in order to determine their relative importance with respect to one another is the same as that outlined in Chapter I. Once again, this procedure can be completed by a single decision-maker or by a group. Either way, each criterion is rated as high (6), medium (5), or low (2) in importance in order to obtain the "criterion weight" index (CW).

A separate panel of distinguished experts was requested to examine the criteria, modify them and assign them weights in order to assist in generating recommendations for occupational priorities for bilingual vocational materials at the national level. Members of the panel are listed in Figure 3.

FIGURE 3
VOCATIONAL PANEL MEMBERS

Willard Wirtz. Secretary of Labor in the Cabinets of President Kennedy and President Johnson (1963-69). Previously a teacher of law at the U. of Iowa and Northwestern U., a labor arbitrator, and a practicing lawyer. Presently a partner in the Washington, D.C. firm of Wirtz and Gentry; Chairman of the Board of Curriculum Development Associates, Inc.; Trustee of Amherst College. Author of Labor and the Public Interest (1963); The Boundless Resource: A Prospectus for an Education/Work Policy (with the National Manpower Institute, 1975).

Stanley H. Ruttenberg. Assistant Secretary of Labor for Manpower (June 1966 to 1969) and Manpower Administrator (January 1965) U.S. Department of Labor; Economic Advisor to the Secretary of Labor, 1963 to 1965. Director, Department of Research, American Federation

of Labor and Congress of Industrial Organizations, (1955 - 1963). Director, Economic Policy Committee, AFL-CIO, (1956 - 1963); Director of the Department of Education and Research of the Congress of Industrial Organizations. Author (assisted by Jocelyn Gutchess) of Manpower Challenge of the 1970s: Institutions and Social Change, The Johns Hopkins Press, 1970 and The Federal-State Employment Service: A Critique (1970).

Ted Mills. Founder and Director of the American Center for the Quality of Work Life. Served as special assistant for productivity to C. Jackson Grayson, Chairman of the Price Commission, 1971 - 73. Former Executive producer of NBC-TV 1949 - 62. Won two "EMMYs", Peabody award and the Golden Eagle. Author of "Work as a Learning Experience" in Work and Education (1977); "Human Resources: Why the New Concern?" Harvard Business Review, March-April 1975; "A Taste of Social Equity" reprinted in the ASTD Journal, October 1975.

NATIONAL DATA

The data necessary to assess the desirability of each occupation on the criteria are then analyzed. A score is assigned based on the best available information (that is, employment growth, job openings, median wage, etc.). Selected data for the national level are contained in Table 8. Due to space limitations, all of the available data could not be included in this Guide. Table 8, for example, displays information on employment growth and job openings for occupational categories and major sub-categories only. The authors of this Guide did, however, analyze data for all occupations on such characteristics as educational requirements, special entry requirements, median wages, aptitude needed, et al. Most of these could not be aggregated for the major occupational sub-categories without

TABLE 8: OCCUPATIONAL CHARACTERISTICS

Occupation	Estimated Employment 1974	Projected Requirements 1985	Percent Change 1974-1985	Annual Average Job Openings
Industrial production/ related occupations:	6,960,500	8,271,800	18.8	306,270
Foundry	105,000	108,500	3.3	2,350
Machining	1,160,500	1,325,000	14.2	40,600
Printing	446,000	493,200	10.6	15,970
Other industrial production	5,249,000	6,345,100	20.9	247,350
Office	12,889,000	16,609,500	28.9	1,181,250
Computer/related occupations	700,000	830,000	18.6	40,500
Banking	787,000	1,095,000	39.1	84,000
Insurance	595,000	688,000	15.6	26,000
Administration and others	1,101,000	1,385,000	25.8	65,500
Service:	9,161,500	10,619,000	15.9	613,300
Cleaning/related occupations	1,945,000	2,457,500	16.3	149,550
Food Service	3,290,000	4,054,000	23.2	250,200
Personal Service	692,000	821,000	18.6	58,350
Private household Service	1,200,000	900,000	-26.7	52,000
Protective	1,377,500	1,726,500	25.3	69,600
Other Service	657,000	660,000	.4	33,600
Education:	135,000	175,000	29.3	14,100
Library	135,000	175,000	29.3	14,100
Sales	5,315,000	6,064,000	14.1	290,300
Construction	4,264,000	5,249,000	26.0	188,300
Transportation:	3,037,100	3,295,650	8.5	80,050
Air Transportation	328,000	405,500	23.6	17,400
Merchant marine	27,500	24,650	-10.4	200
Railroad	311,600	282,000	- 9.5	3,950
Driving	2,370,000	2,583,500	9.0	58,500
Scientific and Technical:	960,500	1,364,400	42.0	54,750
Conservation	10,500	13,800	32.1	500
Others	950,000	1,350,600	42.2	54,250
Mechanics and Repairers:	3,086,000	4,101,200	32.9	145,800
Telephone craft	310,000	349,500	12.7	6,250
Other Mechanics & Repairers	2,776,000	3,751,700	42.2	139,550
Health:	2,937,700	4,717,300	60.6	366,050
Dental	175,000	260,500	48.8	23,400
Medical technologist, technician, & assistant	402,300	642,500	59.7	51,500
Nursing	2,325,000	3,755,000	61.5	287,000
Therapy & Rehabilitation	18,400	32,300	75.5	2,550
Other Health	17,000	27,000	58.8	1,550
Social Service	70,000	115,000	60.9	8,400
Art, design, & Communications:	291,000	349,500	20.1	15,100
Design	212,000	255,000	20.3	11,150
Communications	79,000	94,500	19.6	3,950
Farm	2,651,000	1,339,000	-49.5	-6,800

Note: The data for the category of farm occupations corresponds to the period 1970-1985.

SOURCES: U.S. Dept. of Labor: Bureau of Labor Statistics: Occupational Projections and Training Data, Bulletin 1918, Lecht, A., Matland, N. and Rosen, R.: Changes in Occupational Characteristics: Planning Ahead for the 1980's, The Conference Board, Inc., New York.

Scoring: Employment Growth -- Low, below 15%; Medium, 15-30%; High, over 30%

Job Openings -- Very Low, below 5,000; Low, 5000 to 10,000; Medium, 10,000-25,000; High, 25,000 to 40,000; Very High, 40,000 or over

distorting the data. The analyses of national data are, however, available from the authors.

DETERMINING NATIONAL PRIORITY INDICES

This is the final step in rating the desirability of the various occupations. To obtain the "occupation priority" index (OPI), the scores assigned to the occupation on each criterion are multiplied by the weight assigned to that criterion. The sum of those combined figures gives the occupation's overall rating. A form for making these calculations can be found in Appendix B.

RECOMMENDATIONS AND CONCLUSIONS

Numerous insightful experts, including those on the panel, pointed out the potential growth in certain innovative and virtually new occupational areas which could not, by definition, be detected from the statistical base of already highly visible occupations. Among those cited as suitable for limited English speakers are: medical machinery maintenance and energy technicians in such fields as nuclear and solar industries. Although it was pointed out that we are rapidly moving into a service and "information" job world, there should still be priority placed upon available production-type jobs.

Following the step-by-step procedures of the decision making model as outlined in this chapter, an extensive ranking was made of potentially high choice occupations for which bilingual vocational instructional materials should be produced. These recommendations were based upon available data. Since some of the job categories ranked higher than others on the priority listing, those with highest ranking have been indicated with an (*).

The following are suggested as occupations meeting the criteria above and are recommended as those in which bilingual vocational instructional materials should be produced:

Industrial Production
- Machinist
- *Assemblers
- *Inspectors
- Power Truck Operators
- Wastewater Treatment Plant Operators
- *Welders

Office Occupations
- *Bookkeeping Workers
- *Cashiers
- *File Clerks
- Receptionists
- Secretaries & Stenographers
- *Stock Clerks & Statistical Clerks
- Typists
- *Computer Operators
- Bank Clerk and Bank Tellers

Service Occupations
- *Building Custodians
- *Cooks and Chefs
- *Food Counter Workers
- *Cosmetologists
- Bartenders

Construction Occupations
- Electricians
- *Carpenters
- *Construction Machinery Operators
- *Plumbers and Pipefitters
- Painters and Paperhangers

Mechanics and Repairers
- *Air-conditioning, Refrigeration, & Heating Mechanics
- *Automobile, Truck and Bus Mechanics
- *Industrial Machinery Repairers
- *Maintenance Electricians
- Television and Radio Service Technicians
- Appliance Repairers

Health Occupations
- Dental Laboratory Technicians, Hygienists
- *Medical Laboratory Workers
- *Medical Record Technicians and Clerks
- Respiratory Therapy Workers
- *Licensed Practical Nurses
- *Nursing Aides, Orderlies, and Attendants

*Social Service Occupations
Social Service Workers, Home-making, Consumer Education, etc.

RECOMMENDED OCCUPATIONS REQUIRING JUNIOR COLLEGE, TECHNICAL INSTITUTE OR OTHER SPECIALIZED TRAINING

*Computer Programmers
*Accountants
Buyers & Credit Mgrs.
*Health & Regulatory Inspectors
*Library Technicians & Assistants
*Engineering & Science Technicians
Surveyors
Computer Service Technicians
*Dental Assistants
*Radiologic Technologists
*Registered Nurses
Commercial Artists

*High priority

CHAPTER III

CURRICULAR CONCERNS IN MATERIALS DEVELOPMENT

As illustrated in Chapters I and II, the use of the decision-making model recommended by this Guide requires the formulation of key questions and criteria, followed by an examination and analysis of available data. Recommended national priorities were the outcome of this process in those chapters. The same model is followed in this chapter on curriculum and materials. The key questions addressed are:

> What curricula should be developed for the selected language groups and occupations?

> What instructional materials are essential to the curriculum?

> Are essential materials available?

Obviously, there are no statistics or other hard data available to decision makers in this area. The recommendations offered in this chapter are, therefore, based upon the opinions of leaders in the field, surveys of Government Sponsored Bilingual Vocational programs (known as "Part J"), visits to those programs, and extensive reviews of the literature.

The first question formulated for this chapter assumes that decisions about the development of materials must be predicated upon an understanding of the curriculum which they would serve, including the stated goals of that curriculum. The term "curriculum" is interpreted broadly in this Guide to encompass the entire course of instruction or program, including methodologies, techniques, and materials.

> What are the characteristics of effective curricula for the selected language groups and occupations?

Because of increasing pressures for accountability in attaining stated goals, the concept of competency-based education has been gaining increasing acceptance among curriculum developers. The state of the art indicates that vocational educators have been moving more rapidly toward competency-based education than most of their colleagues. As Finch and Crunkilton have stated:

> Its direct focus on the development of tasks, skills, attitudes, values, and appreciations critical to successful employment makes competency-based education most relevant to vocational and technical education.*

A curriculum which is consistent with the principles of competency-based education would seem particularly appropriate for such special groups as limited English speakers.

The broad goals of bilingual vocational training for limited English speakers have been clearly set forth in the law. The programs are aimed primarily at the provision of means by which they can obtain adequate employment within an English speaking environment. "Vocational" then describes the goal while "bilingual" describes the means. In a competency-based curriculum, the level of English required by the occupation would be analyzed along with the other competencies or tasks involved in the job. A diagnosis of the skills and knowledge possessed by the trainee would then be made. Out of these analyses would come a prescription for the skills and knowledge that must be learned by the trainee. That prescription then is the basis for the establishment of learning objectives which could be arranged in the appropriate developmental sequence for the trainee.

One approach to such individualized or trainee-centered instruction which has been proven effective is the use of modules. Modules can be designed to provide instruc-

*Finch, C. R. and Crunkilton, J. R., Curriculum Development in Vocational and Technical Education, Allyn and Bacon, Inc., Boston, 1978, p. 244.

tion for limited English speakers with a wide range of educational needs. Trainees can be accepted at different levels and instruction designed accordingly so they can proceed at their own pace. The development of individualized instructional programs proceeds in two ways; (1) with the development of learning experiences in several media to provide integrated instructional content for the trainee and (2) with the development of criterion-referenced tests to assure that the trainee has mastered the competency required. The modules can be constructed in a format which corresponds to the language system, readiness level, and stage of development of the limited English speaker to which they are directed.

The use of modules will also facilitate the curriculum's ability to accommodate changes in the state of the art for a given occupation. In automotive mechanics, for example, a curriculum needs to take into account rapid changes in electronic circuitry and the use of test instruments, including the highly sophisticated diagnostic equipment that has been entering the market over the past few years. In essence an individualized instructional program is not simply a collection of modules for students but a total system for planning, developing, and implementing a curriculum designed to ensure that trainees acquire up-to-date knowledge, skills, and attitudes essential for successful job performance in an English-speaking environment.

Another hallmark of such an effective curriculum is the level of its integration. The nature of the bilingual program is such that much skill learning can take place quickly and efficiently by using the native language of the participants. In a number of such programs, the initial ratio of the use of English to the native language is 20:80. As the program progresses, more and more English is used until, for some programs, the ratio is reversed by the end of the program to 80:20. The use of English increases and reaches the level predicted as necessary to pursue the participants' new job skills in the English-speaking environment. In this sense, a programmatic use of English differs from "academic" English

since English is not an end in itself, only an enabling objective to the major vocaticnal goal. The contrast between academic ESL and vocational ESL is also observable in methods used by instructors. The academic ESL approach tends to use drills in class which are unrelated to the vocational component. Pattern practice drills are often rote, boring, and very tiring. In a vocational ESL component, the needed practice is achieved by using the tools of the trade, connecting practice with the realities being learned in the skill training.

The issue is one of relevance -- making the ESL component serve the vocational goal. Diverse objectives and unrelated methodologies of the two components lead not only to student confusion but also to instruction which is irrelevant; for example, providing a lesson about the history of Halloween to students who are jobless and striving hard in their vocational training to prepare for employment. Efforts at integration and adaptation of ESL to the vocational component must be a part of the overall planning of the curriculum.

There is growing awareness, however, that the crux of bilingual vocational training programs is the effectiveness with which the job specific ESL instruction and the vocational training which is taught bilingually are combined and ultimately result in achievement of the goals of each component -- that is, to produce an individual sufficiently competent in the occupational skills and in English to perform and to interact successfully on the job. Such integration is the result of careful planning prior to the implementation of a program. Major goals and objectives and the relationship of each portion of the curriculum to all others are specified. Program staff, administrative and instructional personnel, must then collaborate closely to ensure successful implementation.

Trainees enrolled in bilingual vocational training programs represent an amazing diversity of educational backgrounds, previous work experience, age, and learning styles. They have not only different levels of proficiency in English but also varying levels of literacy in their

native languages. Given these diverse characteristics, careful attention also has to be given to selecting appropriate training methodologies that are consistent with adult learning concepts.

With a variety of methodologies to draw upon, an instructor can choose those which are most congruent with the trainee's culture and learning style. A trainee whose culture places strong emphasis on self-concept and "saving face," for example, should not be placed in a learning situation such as on-the-job training where there is high risk of failure. A better alternative would be to place such an individual in learning situations where new skills can be practiced in a supportive, protective environment. Similarly, trainees who have failed in traditional educational settings, such as the large number of drop-outs to be found among limited English speakers, should not be confronted with methodologies which are strongly theory oriented and rely on the use of lecture, text books and so forth. Hands-on, demonstration, and other experimental techniques such as games, role playing, simulations may be far more appropriate to these individuals. Trainees may also benefit from varying degrees of redundancy, structure, feedback, practice, and so on.

The preceding strategies for developing effective curricula for bilingual vocational training are not intended to be exhaustive. Perhaps they may suggest ideas in the reader which may lead to effective approaches to enhancing bilingual vocational training. These strategies do, however, lead to the next major question to be addressed by this Guide: the need for bilingual vocational training materials.

What instructional materials are essential to the curriculum?

An integral component of the curriculum development process, as represented in Figure 4, is a determination of what materials are necessary for the course.

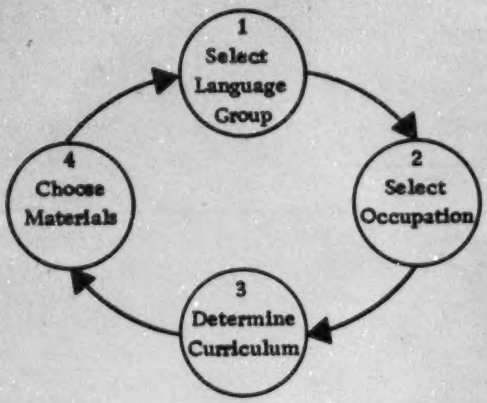


Figure 4. Decision-Making Cycle

Materials might be central to the program or be reinforcing, supportive, or supplementary to it. Various types of materials might be required, ranging from audio-visuals to teacher's manuals to trainee materials.

Based on an extensive review of programs, as well as surveys and interviews of recognized experts, program sponsors, educational personnel, and trainees involved in Part J projects, it has been observed that the following materials are generally considered necessary to an effective bilingual vocational curriculum:

- Diagnostic and Assessment Instruments
  Valid diagnostic instruments which will allow pro-

grams to assess not only the vocational skills of the entering trainee but also such other critical factors as English language ability, level of literacy in both English and the native language, and culturally determined attitudes toward work are essential.

- Trainee Materials in a Variety of Media
  Various learning experiences designed for a single objective could be developed in any combination of the following media:

  - Textbooks
  - Workbooks
  - Films
  - Filmstrips
  - Videotapes
  - Tapes
  - Modules/Learning Packages
  - Games
  - Visuals/Charts, et al.

These materials must be consistent with the basic principles of bilingual vocational training; for example, that concepts should be taught initially in the dominant language of the learner and that ESL should be job specific. In essence, the materials should assist the trainee in making the transition from the native language to the level of English required by the particular occupation and the work environment. Materials should thus be based upon a careful analysis of competencies - including English language competencies - required by the occupation. Criterion referenced tests also need to be included which would allow trainees to continue instruction until they achieve mastery. Finally, all materials need to be congruent not only with the language group's culture, but also with their educational background and literacy levels in both languages. They also must be consistent with adult learning concepts and be free of sex bias.

- Instructor Materials
  Training packages are necessary to prepare instructors to utilize the kinds of diagnostic and instructional materials suggested above. Instructors also need to have in their repertoire skills in the methodologies and instructional techniques discussed earlier in

order to meet the unique needs of limited English speakers.

- Program Management Materials
  Program administrators should be provided with materials which would enable them not only to install an effective instructional system but to perform ongoing evaluations of it.

- Materials for Employers
  Materials which would help reduce the cultural barriers to successful employment of limited English speakers in the selected occupations would also be very helpful to local bilingual vocational training programs. Such materials might take the form of pamphlets which could be given to prospective employers.

After identifying materials which bilingual vocational training programs and their personnel consider necessary to an effective curriculum, one must then consider the availability of such materials.

Are essential materials available?

The bibliography of bilingual vocational materials contained in Appendix A was compiled after an extensive search was made, including a review of the literature, and materials at present being used in bilingual vocational training programs. Although these efforts uncovered few bilingual vocational materials, they did uncover numerous vocational and ESL materials.

Well designed vocational materials are available from a variety of sources such as commercial publishers, curriculum development centers, state consortia, universities, large industries, and the military services. The Vocational Technical Education Consortium of the States (V-TECS)[1], for example, has produced a number of catalogs of performance objectives and criterion-referenced measures for selected occupations. Commercial publishers have been a major source of technical materials over the years. Indeed, certain publishers have specialized in

specific areas such as business occupations, agriculture, and mechanics. The military services have also developed extensive materials of particular value to trade, industrial, and technical education. Much of the latter material is simplified and is, therefore, appropriate for adults with limited educational backgrounds. Major manufacturers have also developed excellent materials, such as repair manuals for their products, which are of value to vocational programs.

Some vocational materials are available in languages other than English. A number of vocational and technical materials are published in Spanish, for example, for both domestic and foreign markets. Some of these are direct translations which, at times, can be found under a single cover. The English language version might be on one page and a translation into the other language on a facing page. It should be pointed out, however, that these materials are invariably textbooks and are not necessarily instructional in that they do not contain exercises, skill building drills. They may not be oriented toward adult learners and are seldom intended for limited English speakers. A major drawback for bilingual vocational training programs, in fact, is that most of the available vocational materials do not provide for a transition from native language to job-related English. The translations and two-language texts also do not take into consideration varying levels of literacy in the native language and in English.

There are, similarly, vast amounts of ESL material available, from the early British-produced "Bridge" series to numerous recent publications. Some indication of the extent of such material can be obtained from reviewing the Midwest Resource Center's annotated bibliography, ESL-ADULT.[2] There are also materials which might be classified as English for special purposes. Some of these are inttended to introduce the student to the English of various occupations. Again, some would be appropriate only to more advanced speakers of English and those with relatively high literacy levels. One example of such material is Regents' ENGLISH FOR CAREERS[3] series. The ESL

materials uncovered were in English only and thus did not meet the need to teach concepts to the limited English speakers in their native language first and to assist them in making the transition to the level of English necessary to secure and maintain employment in the selected occupations. These materials also did not lend themselves to the kind of integrated curriculum which was described earlier.

Given the dearth of bilingual vocational materials, programs have been trying to make do with existing vocational and ESL materials. Many have also been attempting to fill the gap by adapting or developing materials on their own. Some programs, with support from the U.S. Office of Education, have developed bilingual materials like dictionaries and modular units of instruction such as those developed by the New Mexico Technical Vocational School. The Arizona Department of Education has also developed bilingual materials for both office education and business education. These and other bilingual materials are described more fully in the Bibliography contained in Appendix A. Additionally, there are student produced materials such as the bilingual tool catalog developed by trainees in the Bronx Community College's building maintenance training program.

Experience shows, however, that local systems often lack the expertise and the resources to undertake effective vocational curriculum development activities. The task of identifying and validating occupational competencies - including English language requirements - for example, is a difficult one. Because of the similarity of such entry level skill requirements among employers, job task analyses might be better accomplished at the regional or federal level. In the long run, having a local program develop its own materials is time consuming and costly and can lead to duplication of effort and problems of validity.

In summary, numerous vocational and ESL materials are available. In their present form, however, they do not meet the needs of bilingual vocational training programs.

Very few of the materials which are considered essential to an effective bilingual vocational curriculum for the target groups and occupations are currently available. The variety of materials described in the previous section, therefore, need to be developed. Such developmental efforts can, however, draw upon the excellent vocational and ESL materials already on the market. Given the size of this task, it might be better undertaken by curriculum development centers, consortia of state agencies or programs, or commercial publishers. Regardless of who develops the materials, strategies for securing input from bilingual vocational training program administrators, instructional staff, participants and other significant groups would be desirable.

Throughout the first three sections of this Guide, various recommendations have been made as a result of following the basic steps of the suggested decision-making model. These recommendations are summarized in the following chapter.

REFERENCES

[1]Vocational Technical Education Consortium of the States (V-TECS), 1515 W. 6th Ave., Stillwater, OK, 74074.

[2]Midwest Resource Center for Bilingual Bicultural Education, 500 South Dwyer Ave., Arlington Heights, IL, 60005.

[3]Regents Publishing Co., Inc., #2 Park Avenue, New York, NY, 00016.

CHAPTER IV

SUMMARY OF RECOMMENDATIONS AND OTHER CONCLUSIONS

This chapter summarizes recommendations which are discussed throughout the Guide. These are, of course, directed to decision-makers at the federal level since they are derived from an analysis of national data. State and local decision-makers may, obviously, arrive at different conclusions about priorities which will be predicated upon local data. Some additional conclusions relevant to the development and dissemination of bilingual vocational materials are also included. These conclusions and recommendations are not intended to be definitive. Perhaps they will stimulate ideas which will lead to enhancement of efforts to meet the vocational needs of limited English speakers.

SUMMARY OF RECOMMENDATIONS

- The following languages and occupations are recommended as national priorities for the development of bilingual vocational materials:

LANGUAGES

Chinese	Navajo
Filipino	Spanish
Korean	Vietnamese

OCCUPATIONS

Industrial Production	Construction Occupations
Machinist	Electricians
*Assemblers	*Carpenters
*Inspectors	*Construction Machinery Operators
Power Truck Operators	*Plumbers and Pipefitters
Wastewater Treatment Plant Operators	Painters and Paperhangers
*Welders	

Office Occupations
*Bookkeeping Workers
*Cashiers
*File Clerks
Receptionists
Secretaries & Stenographers
*Stock Clerks & Statistical Clerks
Typists
*Computer Operators
Bank Clerk and Bank Tellers

Service Occupations
*Building Custodians
*Cooks and Chefs
*Food Counter Workers
*Cosmetologists
Bartenders

Mechanics and Repairers
*Air-conditioning, Refrigeration, & Heating Mechanics
*Automobile, Truck and Bus Mechanics
*Industrial Machinery Repairers
*Maintenance Electricians
Television and Radio Service Technicians
Appliance Repairers

Health Occupations
Dental Laboratory Technicians, Hygienists
*Medical Laboratory Workers
*Medical Record Technicians and Clerks
Respiratory Therapy Workers
*Licensed Practical Nurses
*Nursing Aides, Orderlies, and Attendants

*Social Service Occupations
Social Service Workers, Home-making, Consumer Education, etc.

RECOMMENDED OCCUPATIONS REQUIRING JUNIOR COLLEGE, TECHNICAL INSTITUTE OR OTHER SPECIALIZED TRAINING

*Computer Programmers
*Accountants
Buyers & Credit Mgrs.
*Health & Regulatory Inspectors
*Library Technicians & Assistants
*Engineering & Science Technicians
Surveyors
Computer Service Technicians
*Dental Assistants
*Radiologic Technologists
*Registered Nurses
Commercial Artists

- The following bilingual vocational materials should be developed for these languages and occupations:
  - Diagnostic and Assessment Instruments
  - Trainee Materials in a Variety of Media (e.g., audio, motion visuals, still visuals, print) including criterion-referenced pre- and post-tests.
  - Instructor Materials (e.g., guides, training packages)
  - Program Management Materials (systems for installing, implementing, and evaluating curricula)
  - Employer Materials (pamphlets, booklets, etc., to reduce cultural misunderstandings)
- Training methodologies should be consistent with the concepts of competency-based education and adult learning.
- A variety of methodologies and techniques should be available so that instructors can choose those which are most congruent with the trainees' culture, skills, and learning style. Examples of some which are thought to be effective are: hands on, demonstration, and other experiential techniques like games, role playing, simulations as

well as instructional modes like team teaching, peer tutoring, guided self-instruction.

- The curriculum, including materials and methodologies, should be integrated. The job-specific ESL instruction and vocational training which is taught bilingually should be combined and ultimately result in achievement of the major goal -- to produce an individual sufficiently competent in the occupational skills and in English to perform and to interact successfully on the job.

OTHER CONCLUSIONS AND SUGGESTIONS

- A conference for publishers and others concerned about the development of bilingual vocational materials was convened in Reston, Va., in August, 1978. Concerns expressed at that meeting focused on the need for additional data on which to base publishing and marketing decisions. One suggestion that grew out of the conference was that a small task force be established to continue the effort begun in this Guide. As Nancy Keefer of Science Research Associates, Inc. (a subsidiary of IBM) stated, "...a small task force composed of representatives from curriculum development centers, AVA, publishers, and Development Associates would be extremely helpful." Such a task force could address the issues outlined above as well as the necessity of underwriting publishing ventures and the need for a clearinghouse.

- As was stated in the Education Amendments of 1976, Part J-General Revisions, "...there is a critical shortage of instructors possessing both the job knowledge and skills and the dual language capabilities required for adequate vocational instruction of such language-handicapped persons." This project has confirmed that finding. In addition to the development of bilingual vocational materials for instructional staff as recommended above, other strategies might be adopted for addressing this continuing need such as:

- Workshops and seminars, pre-service and in-service, for bilingual, creative instructors.

- State of the art conferences on an annual basis.

- A network or association, possibly as a sub-group in an established organization like the American Vocational Association or National Association for Bilingual Education.

- During the efforts to gather appropriate data for this Guide, needs for further research and study in the following areas became apparent:

  - Analyses of the level of language needed to perform various job functions.

  - Longitudinal studies of trainees in these programs.

  - The development of diagnostic tools to separate linguistic and cultural problems from learning disabilities for limited English speakers.

  - A study of cultural barriers to employment.

  - A survey of available sources for state and local data required for decision-making in line with the model outlined in this Guide.

APPENDIX A

BIBLIOGRAPHY

Arizona Business Office Education - Bilingual and Arizona Bilingual Business Education. Arizona Department of Education. Business and Office Education Division. Phoenix, Arizona. 1975.

These texts contain competency-based instructional materials for office occupations, teacher's manuals, lesson plans, and evaluation forms. Most of the instructions and learning materials are translated with the Spanish text facing the English pages. They're intended for jobs that require two languages, but can be used with limited English speakers. These publications require some editing to achieve gender equity.

Bilingual Graphic Design Lexicon: Russian-English Edition. American Council for Emigres in the Professions. New York: New York.

This lexicon contains defined terms of the tools, materials, and procedures of commercial graphic design.

Cordasco, Francesco, and Alvarez, Pablo. Useful Spanish for Medical and Hospital Personnel. Detroit, Michigan: Blaine Ethridge Books. 1977.

This is a manual of vocabulary and frequently used sentence patterns for use by English-speaking hospital personnel to communicate with Spanish-speaking patients. A good instructional aid for a bilingual health assistant class.

de Maza, Barbara S. Business Letter Handbook. Spanish/English. New York: Regents Publishing Co., Inc. 1973.

This handbook contains instructional text, sample letters, and other forms of business correspondence. This book can best be utilized as a supplement to existing course material or by a bilingual secretary.

English & Lao Language Study. DHEW-Refugee Task Force. Washington, D.C. 1976.

This is a mini-dictionary with emphasis on vocational related areas. Not instructional material but a good supplement for vocational and vocabulary training.

Hirschhorn, Howard H. Technical & Scientific Reader in English. New York: Simon and Schuster. 1970.

This student workbook covers selected occupations in technical areas. Exercises accompany each subject area. Instructions and most exercises are in English and Spanish.

Lima, Robert F. Arco Motor Vehicle Dictionary. New York: Arco Publishing Co., Inc. 1969.

This is a technical lexicon divided into two sections, Spanish-English and English-Spanish. This lexicon can be a useful instructional aid in an auto mechanics course for limited English speakers.

Valdez, Connie A. et al. Bilingual Skills Training Program - Auto Mechanics and Bilingual Skills Training Program - Barbering/Cosmetology. New Mexico Technical Vocational School. El Rito: New Mexico.

These publications contain modular units of instruction in auto mechanics, barbering, and cosmetology. All instructions and selected words and phrases are in both English and Spanish.

How to Build a House...Using Self-Help Housing Techniques. Washington, D.C.: U.S. Government Printing Office. 1974.

This publication is intended for use by persons who are building, or adding to homes of their own. Directions, methods, and demonstrations are depicted graphically, and the Spanish translation appears directly under the English.

Toward Bilingual Human Services. Bangor Community College. Bangor: Maine, 1977.

Primarily assists educators and trainers involved in preparing Franco-American adults for human services positions in bilingual setting. It can best be used as a resource guide and a model for replication in other languages or vocational areas. Much of the text is French, but a majority of the vocabulary and exercises are in English.

Directions For Use:

Col. I - List Criteria
Col. II - Criteria Weight
Col. III - Score of Language or Occupation
Col. IV - Priority (CW x Score)

APPENDIX B

LANGUAGE PRIORITY INDEX (LPI)
OR
OCCUPATION PRIORITY INDEX (OPI)

LANGUAGE: _____

Or

OCCUPATION: _____

I CRITERIA	II CW		III SCORES		IV LPI Or OPI
		X		=	
		X		=	
		X		=	
		X		=	
		X		=	
		X		=	
		X		=	
		X		=	
		X		=	
		X		=	

TOTAL